Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Inquiry Concerning the Deployment of	)	
Advanced Telecommunications	)	
Capability to All Americans in a Reasonable	)	GN Docket No. 07-45
and Timely Fashion, and Possible Steps	)	
to Accelerate Such Deployment	)	
Pursuant to Section 706 of the	)	
Telecommunications Act of 1996	)	

COMMENTS OF THE

NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION

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COMMENTS OF THE NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION

The National Cable & Telecommunications Association (NCTA) hereby submits its comments in the above-captioned proceeding.

NCTA is the principal trade association representing the cable television industry in the United States. Its members include cable operators serving more than 90% of the nation's cable television subscribers, as well as more than 200 cable programming networks and services. NCTA's members also include suppliers of equipment and services to the cable industry. The cable industry is also the nation's largest broadband provider of high-speed Internet access after investing $110 billion over ten years to build out a two-way interactive network with fiber optic technology.

INTRODUCTION AND SUMMARY

The Commission's fifth inquiry under Section 706 of the Telecommunications Act of 1996 once again explores, as mandated by Congress, "whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion."

In its four previous reports to Congress, the Commission concluded that broadband deployment was moving ahead on a "reasonable and timely" basis, having grown from 2.8 million high-speed lines in 1999, when the first report was adopted, to 32.5 million lines in 2004 when the last report was released.[1] The story that the facts and figures tell today is that broadband deployment has proceeded at a rate that exceeds the "reasonable and timely" standard, having achieved near ubiquity in the panoply of communications services available to American consumers. By leading analysts' estimations, fully 94% of U.S. households have access to broadband services, and that number is expected to grow to 95% percent by the end of this year.

This is not by accident. The dramatic growth in broadband deployment over the past decade is directly attributable to the Commission's initial policy of "vigilant restraint" that unleashed competitive marketplace forces to drive the deployment and development of broadband services. And the later finding that cable modem service was an "interstate information service" further cleared the way for robust growth. Indeed, the lack of government dictates and regulatory intervention in a new and evolving technology has made all the difference. We are well toward fulfilling Congress' desire under section 706 to promote the full-scale deployment of advanced telecommunications capability to every corner of America. And while there is clearly more to do to bring more Americans into the broadband revolution, this is a remarkable success story.

As leaders of the broadband era, and the largest provider of broadband services in the United States today, cable's investment of over $110 billion in the last decade to transform its

[1] FCC Report on High-Speed Services for Internet Access: Status as of June 30, 2004; Table 1; http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_LInk/IAD/hspd1204.pdf ("High-Speed Internet Access 2004 Report").

infrastructure into a 21st century platform for advanced services has spurred technological innovation and competitive broadband offerings. It has enabled the development of a host of new services and applications from home networking options, multiple e-mail accounts, web filters and parental controls, state-of-the-art security software, and personal web pages. And all of this has been accompanied by the delivery of Internet content at faster speeds and with more and more high-bandwidth video.

In this fifth inquiry, the Commission intends to analyze, among other things, "the competitiveness of the broadband market," "investment and technological trends" and issues "relating to consumer adoption and usage of services requiring advanced telecommunications capability."[2]

The marketplace for the provision of high-speed Internet service throughout the nation is marked by fierce competition between the two leading providers – cable operators and telephone companies. The telcos were late starters, holding back on the provision of digital subscriber line (DSL) service (which competed with their higher-priced T1 and ISDN lines) until cable operators demonstrated that there was a consumer market for their high-speed cable modem service. But today 38% of the nation's high-speed Internet households purchase DSL service, while 59% take cable high-speed data service.[3] Moreover, the marketplace is teeming with alternative broadband offerings from satellite, wireline and wireless providers. And prominent companies are investing significant money and resources into newer technologies, particularly WiMAX and Broadband over Powerlines (BPL), to provide additional competition in the broadband market.

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[2] Notice of Inquiry ("NOI"), GN Docket No. 07-45, at ¶ 11.

[3] Kagan Research, LLC, *Kagan Media Money*, January 23, 2007 at 5.

Furthermore, we should not overlook the fact that some American consumers choose to access high-speed data services at a host of places *outside* the home, including Wi-Fi hotspots, workplaces, colleges and educational institutions, rather than subscribe at home.

As far as adoption rates, the number of households that actually subscribe to broadband service falls short of its wide-scale availability (45% to 94%). But the take rate is growing by leaps and bounds. The Commission's most recent status report on high-speed Internet access shows that between June 2001 and June 2006, the number of U.S. broadband subscribers grew by 600%.[4] Yet the view persists that the United States ranks far below other countries in broadband penetration, largely based on flawed and misleading statistics compiled by the Organization for Economic Cooperation and Development (OECD). The fact is the U.S. has the largest number of broadband subscribers in the world, representing more than 30 percent of *all* the broadband connections in OECD nations – despite its vast geographic size and significantly lower population density than the countries ranked higher on the broadband penetration list. Based on NCTA's analysis of *residential* broadband coverage and adoption, the U.S. ranks near the top of the global rankings.

[4] FCC Report on High-Speed Services for Internet Access: Status as of June 30, 2006; Table 1; http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-270128A1.pdf ("High-speed Internet Access 2006 Report").

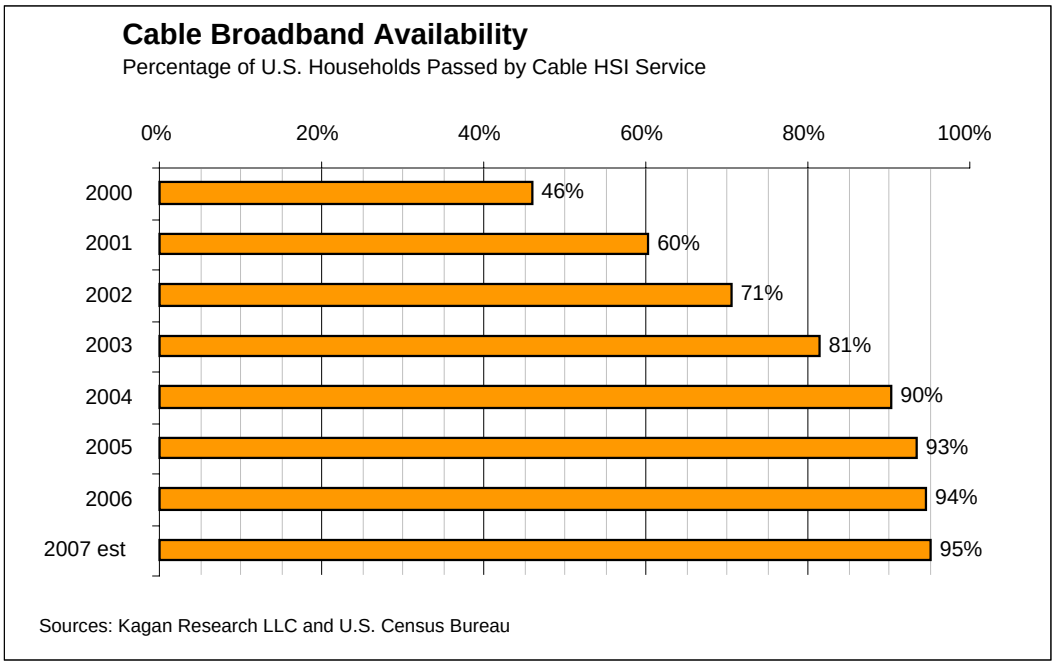
I. DEPLOYMENT OF "ADVANCED TELECOMMUNICATIONS CAPABILITY" HAS EXCEEDED THE STATUTORY "REASONABLE AND TIMELY" PACE AND IS VIRTUALLY UBIQUITOUS ACROSS AMERICA

In the span of a decade, "advanced telecommunications capability" has been rapidly deployed across America at a pace that far exceeds the "reasonable and timely" standard set by Congress in Section 706 of the Act. Indeed, almost three years ago, in the Fourth Report, the Commission found that cable broadband deployment had already reached 90 percent of U.S. households. Since that time cable has continued to extend its reach to achieve near ubiquitous availability of broadband services throughout the U.S.

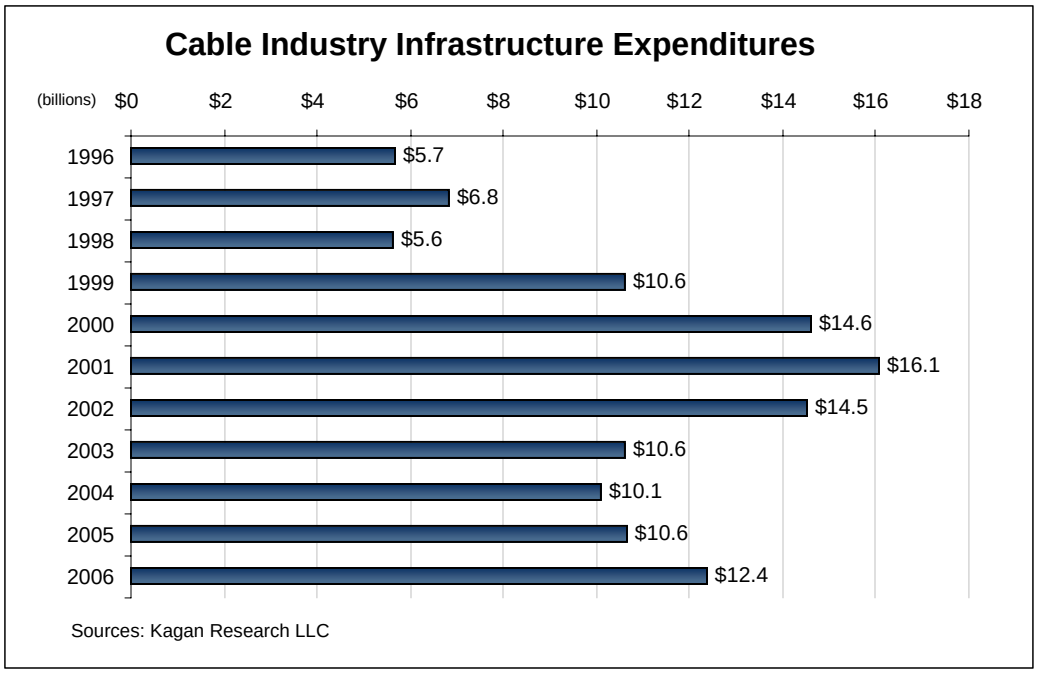
Based on company data collected by the Commission, as of June 30, 2006, cable high-speed Internet service was available to 93 percent of households that could access cable TV service.[5] Industry analysts report even higher penetration rates. Kagan Research data shows, for example, that cable broadband service is available to more than 94 percent of all U.S. homes and it projects 95 percent by year-end.[6] The following graph shows the remarkable six-year progression of cable broadband availability as a percentage of U.S. households:

[5] High-speed Internet Access 2006 Report, Table 14; http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-270128A1.pdf. For purposes of this document, "high-speed Internet service" ("HSI") and "high-speed data service" ("HSD") are used interchangeably.

[6] Kagan Research LLC; Kagan *Broadband Cable Financial Databooks*, 2007 at 11-12.



According to Kagan Research estimates, homes passed by cable's high-speed Internet service reached 119 million in 2006, an increase of seven million homes since the last section 706 report in 2004. And over the past two years, the cable industry has invested another $23 billion to enhance and improve its advanced, interactive, hybrid-fiber coaxial network. This state-of-the-art network enables the delivery of unsurpassed residential broadband data services, video and digital phone services.



As reported in the Commission's most recent broadband report, cable high-speed data service's chief rival – the phone companies' Digital Subscriber Line (DSL) service – is available to 79 percent of households which could access ILEC telephone service. In addition, AT&T is offering its customers outside its DSL coverage area satellite-delivered high-speed service from WildBlue Communications.

Mobile wireless broadband has grown from less than 1 percent of total broadband services in June 2005 to 17 percent in June 2006 and portends a bright future for next generation advanced wireless broadband technologies.[7] In general, in the year ending June 30, 2006, high-speed lines connecting homes and businesses to the Internet increased by 52 percent.[8]

With the level of deployment and investment described above, the Commission can confidently report to Congress that broadband service is not only being deployed on a

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[7] *Id.*

[8] High-speed Internet Access 2006 Report, Table 1; http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-270128A1.pdf.

"reasonable and timely basis" but is widely available to most Americans from at least two providers, with burgeoning competition from alternative platforms eager to supply additional broadband choices to consumers.

As Commissioner McDowell recently observed in a speech addressing the United States' international standing in broadband deployment: "we should not lose sight of the fact that broadband has had the fastest penetration rate of any technology in modern history. That is to say, broadband has been deployed faster than: electricity, radios, TVs, VCRs, DVD players, PCs and every other technology in American history."[9]

Furthermore, as cable and other broadband services continue to experience healthy growth, the Commission can also report the dynamic nature of the high-speed data product, as evidenced by the steadily increasing transmission speeds and the declining price-per-megabit offered by broadband competitors. In 1996, when cable first offered high-speed Internet service as an alternative to dial up access, the speeds were approximately 1-1.5 Mbps. Today, most cable operators offer broadband speeds topping 5 Mbps and some operators, such as Cablevision, offer speeds up to 50 Mbps. Others, like Comcast and Cox, offer a "PowerBoost" service that provides higher speeds ranging from as high as 12-16 Mbps on an on-demand, capacity-available basis. Meanwhile, Verizon and other alternative broadband providers are matching or aiming to exceed peak download speeds of as high as 30 Mbps to 50 Mbps. In response, many cable operators are preparing to deploy the next generation "wideband"

[9] Remarks of FCC Commissioner Robert M. McDowell, Catholic University School of Law Symposium, March 15, 2007, page 10, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-271555A1.pdf.

architecture (DOCSIS 3.0), which is backward-compatible with existing cable high-speed modems, and will deliver speeds of over 100 Mbps.[10]

As discussed below, the increases in both downstream and upstream speeds and the decreasing price per megabit of service is indicative of a vibrantly competitive marketplace that is becoming more and more competitive with the growth in wireless and other new technologies on the horizon.

II. THE BROADBAND MARKETPLACE IS HIGHLY COMPETITIVE AND BECOMING MORE AND MORE COMPETITIVE WITH THE ADVENT OF NEW BROADBAND TECHNOLOGIES

When cable operators decided to rebuild their facilities in order to provide a more robust multichannel video programming service, they also set in motion a revolution in the provision of advanced broadband services. The technology for providing telephone DSL service was already in place, but telephone companies had chosen to make high-speed data access available only to *business* users via T1 lines, underestimating the demand for the service and preserving the more lucrative (*i.e.*, expensive) T1 service and ISDN plans.

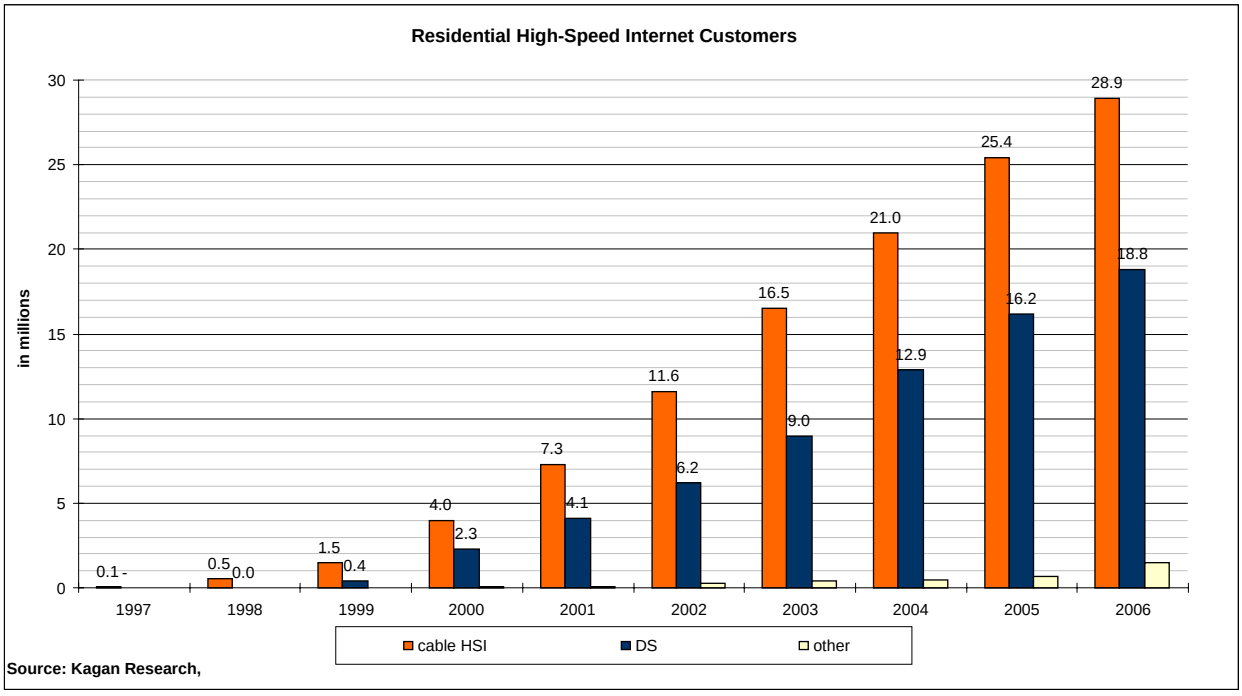
After the passage of the deregulatory 1996 Telecom Act, cable's construction of new facilities was soon followed by the rapid growth of the Internet and the World Wide Web, and cable operators seized the opportunity to offer their customers a brand new residential service – high-speed Internet access.

Cable modem service not only responded to significant consumer demand for faster and better access to the World Wide Web. It also stimulated new and more intense demand for advanced services by creating a platform for the delivery of new Internet services that were

[10] "Comcast's 150 Mbps Modem is Good for U.S. Broadband," *PC World*, May 9, 2007, http://blogs.pcworld.com/staffblog/archives/004354.html; "Comcast's Roberts: 'Wideband' to Trump Telcos," *Multichannel News*, May 8, 2007.

unimaginable in the era of dial-up service. High-speed cable Internet access has transformed the way we listen to, share and purchase music, the way we get our news and information, the way we shop, and the way we communicate. We send pictures and videos by e-mail, we communicate by "instant messaging," and we use webcams for online video chats. We play on-line games with others here and around the world. Cable high-speed data service even provides the platform for Internet-based telephone services.

Once consumer demand for cable modem service became evident, the telephone companies entered the marketplace with their own DSL service. Having conceded a head start to cable operators, the telcos quickly captured a significant share of high-speed Internet customers. Comparing only cable and DSL broadband competitors, the research shows that today 59% of all high-speed Internet households are cable modem customers, while 38% purchase DSL service.[11]



[11] Kagan Research, LLC, *Kagan Media Money*, January 23, 2007 at 5.

Cable operators and telephone companies compete aggressively for new and existing Internet customers. Both providers already have facilities in place to offer high-speed access to customers, and both vigorously seek additional customers to defray the sunk costs of their facilities investments. Moreover, because cable operators, telephone companies and other broadband service providers offer bundled service offerings that include telephone and video services in addition to high-speed Internet access, they have additional competitive incentives to ensure that their Internet offerings provide the best service and the best value to consumers.

While competition between DSL and cable high-speed Internet service is already intense, cable and telephone providers also compete with other fiber-based broadband service providers and newer entrants exploiting advanced wireless technology.

In densely populated, metropolitan areas of the country, major broadband service providers, such as RCN Communications, are offering bundles of video, voice and data services. RCN serves 19 communities in top markets in the Northeast and Midwest, including Massachusetts, New York, Pennsylvania, Washington, D.C., Chicago and Los Angeles. Wide Open West, Knology, Grande Communications and Wave Broadband are also competing against cable and DBS in various cities throughout the country. Their broadband operations are providing the latest technology to compete with cable and telephone providers. In addition, approximately 82 municipally-owned utilities offer alternative broadband services to the public.[12]

Satellite broadband service, such as Hughes Network Services, is available throughout the nation but its customer base today (1.2% of all high-speed Internet households[13]) is largely

[12] "Communities Provide More Services Every Year," American Public Power Association, www.appanet.org.

[13] Kagan Research, LLC, *Kagan Media Money*, January 23, 2007 at 5.

located in those limited areas that cannot economically be served by cable modem or DSL service. But WildBlue Communications is reportedly working with the U.S. Department of Agriculture's rural development program to offer its satellite broadband services on a wider scale.[14] In addition, AT&T and WildBlue recently expanded their agreement announced last year, in which customers in AT&T's 22-state local service areas where DSL service is not available will be offered "AT&T Yahoo! Broadband via Satellite (provided by WildBlue)."[15]

In the wireless arena, fixed wireless broadband is increasingly providing an alternative to cable and DSL in some communities. Its subscribership is approximately 1.6% of high-speed Internet households.[16] Clearwire, for example, provides portable wireless broadband service to 258,000 customers, and several key business indicators in its first quarter 2007 results show "replicable and scalable market performance as the company expands the reach of its simple, high-speed and portable broadband wireless service."[17]

Mobile broadband wireless has shown dramatic growth. As of June 2006, there were 1.1 million non-business mobile wireless subscribers and 9.9 million business mobile wireless subscribers.[18] As new spectrum is opening up for broadband wireless applications, faster speeds and more advanced applications are being developed.

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[14] "WildBlue Takes 2nd Look at USDA Broadband Loan Program," *Communications Daily*, May 3, 2007.

[15] "*AT&T Significantly Expands Broadband Service to Rural Consumers Across Traditional 22-State Territory*," May 9, 2007, http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=23780.

[16] Kagan Research, LLC, *Kagan Media Money*, January 23, 2007 at 5.

[17] Clearwire Reports Record First Quarter 2007 Results", News Release, May 8, 2007.

[18] High-speed Internet Access 2006 Report, Table 3 and Table; http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-270128a1.pdf.

Meanwhile, Wi-Fi networks have proliferated throughout the U.S., primarily serving public spaces. According to Wi-Fi Alliance, there are 120,000 registered Wi-Fi hotspots nationwide, and that number does not include access points that are easy to set up and are not reported.[19] Some hotspots provide service at no charge, while others charge on an hourly or daily basis, or offer subscriptions.

WiMAX and broadband over powerline (BPL) technologies have the potential to offer significant competition to cable HSD and telephone DSL services. Wireless companies continue to invest in network upgrades and new technology to enable them to offer advanced broadband services to their customers. In August of 2006, for example, Sprint Nextel Corporation announced plans to invest $2.5 billion to $3.0 billion over two years to develop and deploy the first 4G nationwide broadband mobile network. The Sprint Nextel 4G network will employ the mobile WiMAX technology over the company's 2.5 GHz spectrum holdings, which cover 85% of the households in the top 100 U.S. markets.[20] Clearwire also recently announced an agreement to purchase all of AT&T's 2.5 GHz spectrum interests, "to secure spectrum holdings in a number of major metropolitan areas in the Southeast, including Atlanta, Miami, Orlando, New Orleans, Jacksonville and other markets . . .."[21]

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[19] TMCnet, *Municipal WiFi Projects in the U.S.*, February 22, 2007, http://www.tmcnet.com/wifirevolution/articles/5189-municipal-wifi-projects-the-us-part-3-3.htm.

[20] "Sprint Nextel Announces 4G Wireless Broadband Initiative with Intel, Motorola and Samsung," News Release, August 8, 2006; http://www2.sprint.com/mr/news_dtl.do?id=12960.

[21] "Clearwire Reports Record First Quarter 2007 Results", News Release, May 8, 2007.

Jupiter Research estimates that within five years, there may be as many as 21 million high-speed mobile WiMAX subscribers worldwide[22] and Parks Associates estimates that by the year 2011 there will be 2.5 million broadband-over-powerline subscribers.[23]

The Commission has rightfully taken steps to facilitate the development of BPL by ruling that BPL, like DSL and cable modem service, should be classified as an "information service." The Commission noted that this step not only "establishes a minimal regulatory environment for BPL-enabled Internet access service that promotes our goal of ubiquitous availability of broadband to all Americans," but also furthers the Commission's goal of developing a consistent regulatory framework across broadband platforms by regulating like services in a similar manner."[24] The Commission recently reached a similar conclusion in deciding that wireless broadband Internet access services also should be classified as information services.[25]

The direct broadcast satellite industry is looking at BPL as another option to compete with cable and telco broadband services. DirecTV's CEO recently stated that the company intends to test delivery of broadband over power lines in a "top 50 city" covering at least half the city.[26]

Competition in the broadband marketplace is enhancing choice and value for consumers. Technological developments are not only making it possible to offer customers higher and higher

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[22] PC Today, *We've Got Your Numbers*, December 2006, http://www.pctoday.com/Editorial/article.asp?article=articles/2006/t0412/01t12/01t12.asp&guid= .

[23] Parks Associates, *FTTx and BPL: Analysis and Outlook*, January 2007, http://www.parksassociates.com/research/reports/tocs/2007/bpl_fttx.htm.

[24] *In the Matter of United Power Line Council's Petition for Declaratory Ruling Regarding the Classification of Broadband over Power Line Internet Access Service as an Information Service*, WC Docket No. 06-10, Memorandum Opinion and Order, 21 FCC Rcd 13281 (2006) at ¶ 2.

[25] *See Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, WT Docket No. 07-53, Declaratory Ruling, FCC 07-30 (rel. Mar. 23, 2007).

[26] "DirecTV May Test Broadband Over Power Lines," *Multichannel Newswire*, May 15, 2007.

speed to access the Internet, but such innovation is enabling customers to choose the speed and bandwidth that they need, so that those who use the Internet to upload and download large amounts of data can do so at a higher price, while those who rely on the Internet solely for e-mail and browsing of information can satisfy their needs at a lower price. As new bandwidth-intensive uses of the Internet continue to develop, cable operators will need to continue to find innovative ways to ensure that those uses are available to those who value them, while also keeping high-speed service available and affordable to as many households as possible.

III. THE U.S. HAS THE LARGEST NUMBER OF BROADBAND SUBSCRIBERS IN THE WORLD AND BY EVERY INDICATOR SUBSCRIBER PENETRATION IS EXPECTED TO CONTINUE ROBUST UPWARD GROWTH

A. Comparisons to Nations with Much Smaller Land Mass and More Densely Populated Areas Are Highly Misleading In Establishing Global Rankings

In the fifth inquiry, the Commission also asks for information "about other countries' development of advanced telecommunications facilities" to provide context and a basis of comparison for the deployment of broadband facilities in this country. It also seeks to analyze information "relating to consumer adoption and usage of services requiring advanced telecommunications capability."

The high rate of broadband deployment and healthy consumer take rates in the United States is undeniable. Yet the view persists that the U.S. lags significantly behind other countries in the adoption of services with advanced capability -- a perception that defies the big picture on many counts. First, the number of consumers who have signed up for high-speed Internet service in the U.S. far exceeds that in any other country in the world. Indeed, this country has the largest total number of broadband subscribers in the world, representing more than 30

percent of *all* the broadband connections in Organization for Economic Co-operation and Development (OECD) countries.[27]

Kagan Research estimates that there were more than 49 million U.S. households with broadband service at the end of 2006[28], and the number of broadband customers continues to grow dramatically. As of March 2007, it is estimated that:

- nearly 30 million households subscribe to cable high-speed data service
- more than 20 million other households receive high-speed data service via DSL, satellite, or fixed wireless providers
- the U.S. household broadband penetration rate is approximately 45%

Moreover, taking into account that there are multiple inhabitants in most households,[29] the number of users of residential high-speed data services is probably between 100 million and 130 million based on census data. In addition, there are a variety of other broadband access points for individuals, such as Wi-Fi hotspots and increasingly mobile wireless devices, which in some cases represent a second or third connection in addition to or in lieu of household service. Even among individuals who lack high-speed data service in their home, a large proportion of U.S. residents have access to HSD service in educational and workplace settings. For example, there are approximately 16 million college students, most, if not all, of whom reside on campuses that provide wired and wireless HSD access to the students and staff. There are also approximately 75 million managerial, professional, sales and office workers, the vast majority of

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[27] OECD Broadband Statistics to June 2006, http://www.oecd.org/document/9/0,2340,en_2825_495656_37529673_1_1_1_1,00.html.

[28] Kagan Research, LLC, *Kagan Media Money*, January 23, 2007 at 5.

[29] U.S. Census Bureau, *2005 American Community Survey*, Average household size = 2.6, http://factfinder.census.gov/servlet/ACSSAFFFacts?_event=&geo_id=01000US&_geoContext=01000US&_street=&_county=&_cityTown=&_state=&_zip=&_lang=en&_sse=on&ActiveGeoDiv=&_useEV=&pctxt=fph&pgsl=010&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=&_keyword=&_industry=.

whom utilize high-speed data service. Many of these workers may use their broadband connection during lunch or personal time for high-speed applications like shopping.

Taking all of these categories into account, it is estimated that total Internet users in the United States amount to more than 200 million people (notwithstanding, as noted above, that some of these users may be counted more than once because of multiple means to access the Internet).

Despite the depth and scale of broadband availability in the United States, OECD ranks the U.S. at 15^{h} in the world in broadband adoption.[30] But, as recently observed by Commissioner Robert McDowell, "many of the statistics surrounding our nation's broadband penetration rate can be misleading."[31] As the Commissioner points out, OECD ranks the U.S. behind such countries as Denmark, the Netherlands, Iceland, Switzerland and Sweden in terms of broadband penetration. But as he explains:

> OECD does not account for population density, which puts a country as large as ours – with sizable rural areas – at a disadvantage. No other country above the U.S. on the OECD list occupies an entire continent like we do. No other country above us on this list is 75 percent rural, like the U.S. is. In Iceland, number three on the OECD list, almost 65 percent of its total population lives in its largest city, Reykjavik.[32]

Compared to most of the nations that rank "ahead" of the U.S. in broadband penetration, the U.S. is geographically vast and significantly less dense. Korea, often mentioned as a leader in broadband, is 16 times more densely populated than the United States, and more than half of

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[30] OECD Broadband Statistics to December 2006, released: 23 April 2007. http://www.oecd.org/document/7/0,2340,en_2649_34223_38446855_1_1_1_1,00.html.

[31] Remarks of Commissioner Robert M. McDowell, Catholic University School of Law Symposium, March 15, 2007, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-271555A1.pdf.

[32] *Id.*

Koreans live in large apartment buildings, while 75 percent of Americans live in single-family dwellings.[33]

Similarly, comparing the U.S. to much smaller regions like Hong Kong, which is 422 square miles, or Iceland, where almost 93 percent of its inhabitants live in urban areas is not a meaningful comparison. Simply put, we have vastly more people to connect to broadband and a vastly larger land mass to cover, yet this has not deterred the rapid pace of deployment. It is clear, however, that geography, distance, population concentration and urbanization factor into the pace and investment in any network, not just broadband deployment.

A more telling indicator of the state of broadband take rates in Europe as compared to the United States is a recent report of the European Competitive Telecommunications Association. ECTA reported that the broadband adoption rates across Europe have fallen from a 23 percent annual penetration growth rate to only 14 percent growth between April and September 2006.[34] The slowing growth in Europe stands in stark contrast to the continuing robust growth in the U.S.

Moreover, a deeper analysis of the OECD's broadband rankings reveals significant flaws and a far more complicated picture than its surface rankings present. In its primary statistic, *Broadband subscribers per 100 inhabitants*, OECD uses a total subscriber figure that includes household subscriptions together with *some* business connections. But OECD excludes the tens of millions of U.S. workers that access the Internet via special access connections such as direct fiber connections or T1 lines. OECD also leaves out the approximately 16 million college

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[33] The U.S. has a population density of 31 people per square kilometer, compared with Korea at 483 people per square kilometer.

[34] *Broadband Take-Up Dramatically Slows Across Europe*, February 1, 2007, ECTA news release, http://www.ectaportal.com/en/upload/File/Broadband%20Scorecards/Q306/FINAL%20European%20PR%20Sc%20Q306_2_.pdf.

students in the U.S., most of whom have access to both wired and wireless high-speed Internet service. In addition, OECD fails to include other high-speed data users that access the Internet via Wi-Fi connections, and the growing number of mobile wireless customers. An analysis which includes access points for multiple sources of high-speed data could, however, result in double or triple counting of broadband customers.[35]

Therefore, NCTA believes that a more reliable and consistent measure is to limit global rankings to *household* penetration when comparing the rates of broadband adoption around the world, not subscribers per 100 inhabitants. Most policy discussions center on the issue of *residential* broadband coverage and adoption. This correction would eliminate the error of inclusion of only selected business subscriptions, which characterizes OECD's report, from the numerator; and the denominator would consist solely of households rather than a unit of total residents. With these adjustments, the resulting measure would be household penetration.

Viewed this way, U.S. household broadband penetration stood at approximately 45% as of March 2007. When measured on this more rational and equitable basis, the U.S. vaults past eight European countries which ranked higher in OECD standings. In fact, only The Netherlands (62%) and Denmark (49%) have higher household penetrations than the U.S.[36]

Furthermore, an analysis of broadband deployment should also take into account the U.S. households that currently choose *not* to purchase such services. First, more than 26 percent of

[35] In addition, by measuring total (primarily household) subscriptions per units of 100 inhabitants, the OECD fails to account for disparities in average household sizes throughout the world. Those countries with fewer average residents per household (many of the northern European countries at the top of the OECD listing) will tend to rank higher in the OECD statistic, yet the irony is that there are fewer residents in each house that are able to take advantage of the HSI service.

[36] European figures obtained from E-Communications Household Survey, July 2006.

U.S. households still do not own a computer.[37] Second, it is estimated that more than 21 percent of U.S. households continue to rely on dial-up Internet access for basic email and limited browsing functionality, even though most of them have one or more high-speed Internet service options available to them.[38]

According to a study conducted by Parks Associates in the 1st quarter of 2007, 29% of all U.S. households do not have any form of Internet access and do not intend to subscribe over the next 12 months. The reasons cited include: 44% said they were not interested in anything on the Internet, 17% were not sure how to use the Internet, and 14% stated that they have Internet access at work. Only 14% of this disinterested group cited that they could not afford a computer, and another 8% stated that they could not afford to pay for broadband service. Only 3% of the respondents claimed that high-speed data service was not available to their home.[39]

And while it may seem surprising, not every consumer yet sees the need to switch to broadband. A Pew Internet and American Life Project survey reported that nearly 60% of these dial-up users said they are not interested in switching to broadband.[40] This brings to light the fact that the universe of non-broadband users is composed of a significant number of people that are not interested in the Internet or do not see the need to switch from dial-up access.

In sum, as has been observed recently, "OECD rankings are not particularly meaningful for a variety of reasons and have derailed substantive debate on this crucial issue. Rapid

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[37] Nielsen Media Research, *Nielsen Study Shows DVD Players Surpass VCRs*, December 19, 2006, http://www.nielsenmedia.com/nc/portal/site/Public/menuitem.55dc65b4a7d5adff3f65936147a062a0/?vgnextoid=4673a1bcb279f010VgnVCM100000ac0a260aRCRD.

[38] Morgan Stanley Research, *Cable/Satellite - Looking into 3Q06 and 2007*, October 25, 2006 at 35.

[39] Parks Associates, *Offline Americans see Internet of Little Value*, March 22, 2007, http://www.parksassociates.com/press/press_releases/2007/nat_scan1.html.

[40] Pew Internet & American Life, *Home Broadband Adoption*, May 28, 2006, http://www.pewinternet.org/PPF/r/184/report_display.asp.

increases in broadband subscribers and investment, as well as the emergence of new broadband platforms such as fiber and wireless, indicate that the market is working well."[41] As illustrated by the White House telecommunications adviser, Richard Russell, noting contradictions in OECD's calculations of broadband penetration, OECD's data shows that "one of the countries doing the worst is Ireland," yet "the very next chart showed absolute investment in [information and technology] in the country of Ireland is off the chart when it comes to Europe. Clearly there is a complete mismatch in the statistics that we're looking at."[42]

Finally, as the Commission analyzes the state of broadband, it is useful to note the *Networked Readiness Index* recently released by the World Economic Forum. The report states that the U.S. "maintains its primacy in innovation, driven by one of the world's best tertiary education systems and its high degree of cooperation with the industry as well as by the extremely efficient market environment displayed."[43] In addition, the U.S. led or was second in market environment, number of Internet hosts, e-government readiness, infrastructure environment, Internet sever security, low-cost broadband, research institution quality, cluster development, and number of PCs.[44]

B. U.S. Broadband Penetration Is Increasing As Competitors Offer More Options and Price Points for Internet Service

The gap between broadband penetration and availability presents much sought-after opportunities for providers who are able to offer greater value to consumers. By offering a better

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[41] "Towards Effective U.S. Broadband Policies", Scott Wallsten, The Progress and Freedom Foundation, Progress on Point, release 14.7, May 2007.

[42] Communications Daily, May 8, 2007 at 3.

[43] World Economic Forum press release, Denmark climbs to the top in the rankings of the World Economic Forum's Global Information Technology Report 2006-2007, March 28, 2007, http://www.weforum.org/en/media/Latest%20Press%20Releases/gitr_2007_press_release.

[44] Communications Daily, March 29, 2007 at 14.

price-quality ratio, a provider can capture customers not only from its competitors but also from the large number of households that have not yet been persuaded to purchase the service. Given the large sunk costs of capital-intensive broadband facilities and the effect that a superior Internet service can have on the provider's video and telephone revenues, it's not surprising that cable operators and wireline and wireless companies are continually upgrading the speed and quality of their Internet offerings. And they are also continually searching for ways to offer service more efficiently at price points that maximize value to consumers.

The standard speed on Cablevision Systems' Optimum Online service, for example, is now 15 Mbps, with 30 Mbps available for an additional $9.95 per month. The standard speed for most cable high-speed data providers is now 6 Mbps, while the DSL offerings of the telephone companies carry standard speeds of 1.5 Mbps to 3 Mbps. These speeds have doubled or tripled within the last several years. Bright House and Insight offer a high-speed data service of 15 Mbps. And, as noted earlier, Comcast and Cox rolled out the "PowerBoost" feature, a network technology that temporarily doubles Internet speeds at no additional cost for consumers subscribing to the company's 6 Mbps and 8 Mbps services, raising download speeds to 12 Mbps and 16 Mbps, respectively.

These are enhancements that may not be noticeable to those who use the Internet mainly for sending e-mail and reading online newspapers and blogs. But higher speeds matter enormously for those who rely on the most bandwidth-intensive Internet sites and services, such as peer-to-peer file sharing, and the uploading and downloading of streaming video and music.

Though these upgrades are costly, operators are also seeking ways to enhance the speed and quality of service without excessively increasing the price of such upgrades – especially for those customers who are least likely to benefit from them. Technology is making it possible to

offer "tiered" service to customers, providing the option to purchase higher speeds and greater bandwidth or to purchase a "basic" service at a lower price.

In addition, if the marketplace supports it, broadband providers may be able to develop innovative business models that would shift some of the costs from consumers to large commercial web-based providers (who, in turn, could recover costs from the particular consumers who use them – and from other sources, such as advertisers). Such business models could be a win-win-win proposition for consumers, web-based providers, and broadband providers, as consumers would pay less and use more, commercial web-based providers could develop and market innovative new products and services, and broadband providers could sell more services since their retail pricing would be lower than it otherwise would be.

As these innovations develop, consumer demand for the service continues to accelerate. Morgan Stanley projects that the number of broadband households will increase by nearly 50% over the next four years, with more than 72 million households receiving high-speed Internet service by the end of 2010.[45] Another indicator of a vibrant broadband industry in this country is its impact on commerce. A Jupiter Research analyst has estimated, for example, that by 2010, the Web will affect half of all retail sales, encompassing consumers going online for pricing and product research in addition to actually making purchases.[46] Forrester Research predicts that U.S. e-commerce will account for 13% of total retail sales by 2010.[47]

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[45] Morgan Stanley Research, *Cable/Satellite - Looking into 3Q06 and 2007*, October 25, 2006 at 35.

[46] Infoworld, *U.S. e-tailing sales to have brisk growth through 2010*, February 7, 2006, http://www.infoworld.com/article/06/02/07/75135_HNetailingsales_1.html.

[47] Internet Ad Sales, *Forrester Research US eCommerce Forecast*, September 19, 2005, http://www.internetadsales.com/modules/news/article.php?storyid=6204. The U.S. Census Bureau recently announced that e-commerce sales were an estimated $109 billion in 2006, accounting for 2.8% of total retail sales. U.S. Census Bureau, *QUARTERLY RETAIL E-COMMERCE SALES*, February 16, 2007, http://www.census.gov/mrts/www/data/html/06Q4.html.

IV. THE COMMISSION SHOULD CONTINUE TO PERMIT ADVANCED SERVICES TO DEVELOP IN A STABLE, UNREGULATED ENVIRONMENT

As the Commission prepares its Fifth Report, it should be mindful that the best way to meet Congress' directive in Section 706 to "encourage" the already rapid deployment and growing penetration and development of broadband facilities and services is to maintain a watchful but deregulatory approach. The cable industry believes that there is an appropriate role for the government in promoting the continued growth of advanced telecommunications capability, particularly in the area of spectrum policy. And government involvement is crucial to ensuring that all players in the broadband marketplace are able to compete on a level playing field. We are concerned, however, that various proposals to regulate the Internet – particularly those advanced in the name of "net neutrality" – would hinder the continued widespread investment in and deployment of broadband desired by all, both in new competing technologies as well as in advanced networks provided by cable and other industries.

It is important that cable operators (and content providers) not be prevented, under the rubric of "net neutrality," from seeking innovative ways to maximize value to the maximum number of consumers.

The Commission has, in this regard, consistently struck the right balance, adhering from the outset to its policy of "vigilant restraint." It has recognized the possibility that facilities-based providers of Internet access could conceivably act in ways that adversely affect marketplace competition. But it has refrained, in the absence of any indication that this is more than a hypothetical concern, from adopting prophylactic regulations that could do more harm than good. The policy of leaving the Internet unregulated has been a success and encouraged the investment of billions of dollars in innovative new products and services.

Fierce competition between cable operators, telephone companies and other providers of Internet access will drive them to continue to seek ways to attract and retain not only the heavy users of Internet service but also those households that have not chosen to purchase the service. The Commission should continue to promote this pro-competitive result with its policy of vigilant restraint and market-based policies to encourage and accelerate broadband deployment by a variety of newer entrants.

A. Cable Broadband Has Also Prospered Because Of Product Bundles; Government Regulation of Bundles, Including Á La Carte Requirements, Would Deter Broadband Growth

With the advent of the voice-video-data triple play (as well as some wireless offerings in quadruple plays) cable has developed innovative pricing structures. Increasingly common, by cable and wireline providers, are introductory triple play offers that include broadband service, unlimited domestic calling, and digital video tiers for $99. Since 1999 cable programming services (CPS) tiers have been price deregulated, and this increased flexibility in pricing, among many other factors, has led to these very attractive combination buys. Some operators offer a $33-$33-$33 package.[48] Other operators have offered $40-$30-$20 for each one of the triple play purchased.[49] These offers make residential broadband a compelling proposition.

Broadband subscriber penetration has been a direct beneficiary of these packages. An existing video customer, who is inclined to consider switching phone providers, may find adding broadband a "no-brainer" in light of the attractive bundle pricing. These bundled prices, however, depend on assumptions made by cable marketers about the demand curve of each of

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[48] *See, e.g.*, http://www.comcast.com/tripleplay/default.html?CMP=KNC-1TO1Q4TPLY074&s_kwcid=comcast%20triple%20play|672474667.

[49] Farrell, "Triple-Play Boosts Insight in 4Q, Mar. 7, 2006, at http://www.multichannel.com/article/CA6313944.html.

the services and the relative take-rates of each service. As video today represents the bulk of cable operator revenues, any government effort to tamper with the market-driven manner in which it is offered would affect the price of a triple-play bundle. The lift that broadband penetration has gained from the triple play would be undermined, if, for example, government-imposed á la carte pricing were mandated.

NCTA has elsewhere detailed the practical, policy,[50] and constitutional[51] problems associated with á la carte. But in the context of the FCC's Sec. 706 inquiry, it is important to emphasize the baleful effects of government á la carte intrusion into the marketing practices of video. This is particularly true when viewed from the prism of Sec. 706, whose directive is to "remov[e] barriers to infrastructure investment" if advanced telecommunications capability is not being deployed in a reasonable and timely fashion. Imposing an á la carte requirement would erect *new* barriers to investment by requiring video providers to offer cable programming services in a way that would lead to higher overall costs for video and a net loss in consumer welfare. Given Congress's keen interest in fostering broadband deployment and penetration through Sec. 706 and since – an interest also recognized as the Bush Administration's leading communications policy objective – tampering with market-driven packaging of video-data (and voice services) via á la carte should be resisted.

B. Federal Government Initiatives Should Focus on Promoting Broadband Availability In Unserved Areas

In a highly competitive marketplace, we believe the government should focus its attention on addressing the issue of broadband availability in areas of the country that are

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[50] Comments of NCTA, *A La Carte and Themed Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Sys.*, MB Docket No. 04-207, July 15, 2004.

[51] *Id.*, Attachment B., Geoffrey Stone & David Strauss, "The First Amendment Implications of Government-Imposed A La Carte and Themed-Tier Requirements on Cable Operators and Program Networks.

currently unserved. We recognize that there are still remote rural areas across the United States that lack access to affordable broadband service. We would thus urge that existing and future federal initiatives to promote ubiquitous broadband availability more carefully target these unserved areas of the country.

In terms of actions by the Commission, Section 706 recognizes that the focus should be on "removing barriers to infrastructure investment" and "promoting competition in the telecommunications market."[52] The best way for the Commission to remove barriers to investment is to pursue a deregulatory agenda – not just for broadband, but for voice and video services as well. As consumers increasingly purchase voice, video and broadband services in a single bundled package, the Commission should recognize that excessive regulation of any of these services will increase the price of the bundle and diminish the business case for new investment. For example, the Commission's policy of not subjecting cable modem service or DSL service to universal service contributions is extremely beneficial to consumers, but the Commission must be careful not to diminish those benefits through excessive fees on voice and video services.

The Commission also can achieve the goals of Section 706 through federal universal service mechanisms. Through the e-rate program, for example, broadband service is now nearly ubiquitous throughout the nation's schools.[53] Similarly, although the Commission's high-cost support mechanisms are intended to support the provision of voice service in high-cost areas, the networks that have been built with this money have enabled telephone companies to introduce

[52] Telecommunications Act of 1996, § 706(b).

[53] *See* Notice at ¶ 28.

broadband service in most of these areas.[54] Now that many high-cost areas have both cable and DSL available,[55] it is time for the Commission to start phasing out support in competitive markets and targeting it to those areas that remain unserved. The Commission also should consider expanding the Lifeline and Link-Up Programs to help ensure that broadband access is extended to low-income households.

In addition to actions within the Commission's jurisdiction, NCTA believes there are other steps the government can take to promote the availability and adoption of broadband services. For example, the Rural Utilities Service (RUS) at the Department of Agriculture has a program that provides government loans for the construction of broadband networks. The RUS loan program has been criticized by many people, including NCTA, because loans have been provided primarily to companies building networks in areas that are already served by at least one broadband provider. As with the USF program, NCTA believes that RUS loans can be more effective in promoting investment in broadband networks if the program is reformed to ensure that funding goes to unserved areas.[56]

Congress also can take steps that would promote broadband availability and adoption. NCTA has expressed support for legislation that would set aside additional funding for the deployment of broadband services in unserved areas.[57] NCTA also has urged passage of

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[54] For example, the National Telecommunications Cooperative Association (NTCA) reported that, in a 2006 survey of its members, 100 percent of respondents were providing broadband service to some portion of their service area. NTCA 2006 Broadband/Internet Availability Survey Report (August 2006). The majority of these companies also are offering video services. *Id*. at 12 (59 percent of respondents are offering video services).

[55] *Id*. at 3 (86 percent of respondents face competition in the provision of broadband services).

[56] The RUS recently released a Notice of Proposed Rulemaking in which it is seeking comment on these type of reforms. *Rural Broadband Access Loans and Loan Guarantees*, Proposed Rule, USDA, Rural Utilities Service, 72 F.R. 26742 (May 11, 2007). Congress also is considering legislation – H.R. 2035, introduced by Reps. Herseth-Sandlin and Moran – that would reform the program. NCTA strongly supports this bill.

[57] "*Universal Service for Americans Act*," S. 101, introduced by Senator Ted Stevens, January 4, 2007.

legislation that would make permanent the current moratorium on Internet access taxes and unfair taxes on electronic commerce.[58] As noted above, excessive regulation diminishes the incentive to invest in broadband networks. Maintaining a tax-free environment for broadband services allows cable and other broadband providers to provide more affordable high-speed Internet service to millions more consumers in an environment unfettered by unnecessary taxation.

CONCLUSION

There is overwhelming evidence that advanced telecommunications capability is being deployed not only on a "reasonable and timely" basis, but on a highly aggressive and highly competitive basis, throughout the United States. And significant progress has been made in consumer willingness to purchase broadband services in the home, approaching nearly half of all households with access to broadband services today. The Commission should report this to Congress in its fifth Section 706 report and continue to let the marketplace bring consumers the full benefits of broadband deployment.

Respectfully submitted,

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[58] "*Permanent Internet Tax Freedom Act of 2007*," HR. 743, introduced by Rep. Anna Eshoo, January 31, 2007. "*Permanent Internet Tax Freedom Act of 2007*," S. 156, introduced by Senator Harry Reid, January 4, 2007.